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Michael Neal

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EXAMINER

RUHL, DENNIS WILLIAM

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Please find below and/or attached an Office communication concerning this application or proceeding.

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1 UNITED STATES PATENT AND TRADEMARK OFFICE

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4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES
6

7
8 *Ex parte* MICHAEL NEAL,
9 KRISHNA VENKATRAMAN,
10 ROB PARKIN,
11 SUZANNE VALENTINE,
12 PHIL DELURGIO, and HAU LEE
13

14
15 Appeal 2009-005411
16 Application 10/007,002
17 Technology Center 3600
18

19
20 Decided: February 17, 2010
21

22
23 Before ANTON W. FETTING, JOSEPH A. FISCHETTI, and BIBHU R.
24 MOHANTY, *Administrative Patent Judges*.
25 FETTING, *Administrative Patent Judge*.

26 DECISION ON APPEAL
27

1 STATEMENT OF THE CASE

2 Michael Neal, Krishna Venkatraman, Rob Parkin, Suzanne Valentine,
3 Phil Delurgio, and Hau Lee (Appellants) seek review under 35 U.S.C. § 134
4 (2002) of a final rejection of claims 1-4, 9, 14-19, and 25-30, the only claims
5 pending in the application on appeal.

6 We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b)
7 (2002).

8 SUMMARY OF DECISION¹

9 We REVERSE.

10 THE INVENTION

11 The Appellants invented a system for providing optimized pricing for a
12 subset of a plurality of products in a plurality of stores (Spec. 1:20-21).

13 An understanding of the invention can be derived from a reading of
14 exemplary claim 1, 2, 3, 19, and 29, which are reproduced below [bracketed
15 matter and some paragraphing added].

¹ Our decision will make reference to the Appellants' Appeal Brief ("App. Br.," filed July 7, 2008) and the Examiner's Answer ("Ans.," mailed September 17, 2008), the Appellants' Specification ("Spec.," filed Nov. 30, 2001) and the Final Rejection ("Final Rej.," mailed November 19, 2007).

1 1. A computer implemented, price optimization system for
2 optimizing a preferred set of prices for a subset of a plurality of
3 products, comprising:

4 [1] a rule editor configured to set a plurality of relaxable
5 rules, wherein the plurality of relaxable rules is set utilizing rule
6 parameters, wherein the rule editor utilizes default values of the
7 rule parameters, and further wherein the rule editor enables
8 configuring of the rule parameters by a user;

9 [2] a rule prioritizer configured to prioritize the plurality of
10 relaxable rules, and for identifying at least one lower priority
11 infeasible rule from the plurality of relaxable rules;

12 [3] a rule relaxation module configured to incrementally
13 relax any infeasible rule of the plurality of relaxable rules which
14 has a lower priority than the at least one lower priority
15 infeasible rule, enabling the at least one lower priority
16 infeasible rule to become feasible;

17 [4] a database configured to store initial prices for a plurality
18 of products;

19 [5] a product designator configured to designate a subset of
20 products of the plurality of products, wherein the number of
21 products in the subset of products is less than the number of
22 products in the plurality of products; and

23 [6] an optimization engine configured to optimize prices for
24 products in the subset of products, while maintaining the initial
25 prices of all other products of the plurality of products and
26 wherein the optimizing of prices complies with the relaxed any
27 infeasible rule of the plurality of rules.

28
29 2. The price optimization system, as recited in claim 1, wherein
30 the product designator for designating a subset enables a
31 number N to be designated, and wherein the product designator
32 selects no more than N products of the plurality of products to
33 form the subset of products, and wherein the selected no more
34 than N products has the largest impact on the optimization of
35 prices of any subset of no more than N products of the plurality
36 of products, and further wherein the largest impact on the

1 optimization is determined by ranking all products by a
2 marginal contribution to the optimization and selecting the no
3 more than N products by a mixed integer problem.
4

5 THE REJECTIONS

6 The Examiner relies upon the following prior art:

Reuhl et al. US 5,873,069 Feb. 16, 1999
7

8 Claims 1-4, 9, 25, 26, and 29 stand rejected under 35 U.S.C. § 112, first
9 paragraph, as failing to comply with the written description requirement.

10 Claims 2 and 15 stand rejected under 35 U.S.C. § 112, first paragraph,
11 for failing to comply with the enablement requirement.

12 Claims 2 and 15 stand rejected under 35 U.S.C. § 112, second paragraph,
13 as being indefinite for failing to particularly point out and distinctly claim
14 the subject matter which the Appellants regard as the invention.

15 Claims 1-4, 9, 14-19, and 25-30 stand rejected under 35 U.S.C. § 102(b)
16 as being anticipated by Reuhl.
17

18 ISSUES

19 The pertinent issues to this appeal are:

- 20 • Whether the Appellants have sustained their burden of showing that
21 the Examiner erred in rejecting claims 1-4, 9, 25, 26, and 29 under 35
22 U.S.C. § 112, first paragraph, as failing to comply with the written
23 description requirement.

- 1 ○ This pertinent issue turns on whether the specification describes
2 a rule for prioritizing such that a person with ordinary skill in
3 the art would have known that the Appellants were in
4 possession of the invention.
- 5 • Whether the Appellants have sustained their burden of showing that
6 the Examiner erred in rejecting claims 2 and 15 under 35 U.S.C.
7 § 112, first paragraph, for failing to comply with the enablement
8 requirement.
- 9 ○ This pertinent issue turns on whether the description of the
10 feature of optimizing the prices of a subset of products would
11 cause a person of ordinary skill in the art to perform undue
12 experimentation in order to practice the claimed invention.
- 13 • Whether the Appellants have sustained their burden of showing that
14 the Examiner erred in rejecting claims 2 and 15 under 35 U.S.C.
15 § 112, second paragraph, as being indefinite for failing to particularly
16 point out and distinctly claim the subject matter which the Appellants
17 regard as the invention.
- 18 ○ This pertinent issue turns on whether a person with ordinary
19 skill in the art would have understood the claim language that
20 recites products have the largest impact on price optimization.
- 21 • Whether the Appellants have sustained their burden of showing that
22 the Examiner erred in rejecting claims 1-4, 9, 14-19, and 25-30 under
23 35 U.S.C. § 102(b) as being anticipated by Reuhl.
- 24 ○ This pertinent issue turns on whether a rules editor is inherent
25 to all programming.

FACTS PERTINENT TO THE ISSUES

The following enumerated Findings of Fact (FF) are believed to be supported by a preponderance of the evidence.

Facts Related to Appellants' Disclosure

01. A subset optimization process is performed in such a way as to have the largest impact on the objective function (Spec. 27:10-11). In other words, if the objective function is to maximize profit, then a subset of products whose prices are most likely to have the largest impact on optimizing profit are chosen (Spec. 27:12-14). The selected subset of products is further ranked by their marginal contribution to the objective function (Spec. 27:14-17). The prices of products not in the change set are frozen and the subset of products whose prices are allowed to change are selected by a mixed integer problem (Spec. 27-14-19).
02. Once products are selected for subset optimization, a binary variable is created for each product to indicate whether the product is included in the subset (Spec. 33:8-11). The objective function is then the sum of the binary variables weighted by the maximum marginal value (λ'_k and λ''_k).

Facts Related to the Prior Art

Reuhl

03. Reuhl is directed to an automated system for pricing and repricing goods or services responsive to market changes (Reuhl 1:6-10).

04. The system includes a database for storing and maintaining the prices of a plurality of goods in a plurality of markets (Reuhl 3:29-40). The system further includes an application for pricing and repricing product items, responsive to market price changes on a product-by-product and market-by-market basis (Reuhl 3:41-44). When a company prices or competitor prices are updated, the pricing program is invoked to re-price items based on predetermined pricing rules (Reuhl 3:44-48).

Facts Related To The Level Of Skill In The Art

05. Neither the Examiner nor the Appellants has addressed the level of ordinary skill in the pertinent art pricing optimization. We will therefore consider the cited prior art as representative of the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (“[T]he absence of specific findings on the level of skill in the art does not give rise to reversible error ‘where the prior art itself reflects an appropriate level and a need for testimony is not shown’”) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

1

2 *Facts Related To Secondary Considerations*

3 06. There is no evidence on record of secondary considerations of
4 non-obviousness for our consideration.

5 PRINCIPLES OF LAW

6 *Written Description*

7 The first paragraph of 35 U.S.C. 112 requires that the specification
8 shall contain a written description of the invention. This requirement is
9 separate and distinct from the enablement requirement. *See, e.g., Vas-Cath,*
10 *Inc. v. Mahurkar*, 935 F.2d 1555, 1560 (Fed. Cir. 1991).

11 The “written description” requirement implements the principle
12 that a patent must describe the technology that is sought to be
13 patented; the requirement serves both to satisfy the inventor's
14 obligation to disclose the technologic knowledge upon which
15 the patent is based, and to demonstrate that the patentee was in
16 possession of the invention that is claimed.

17 *Capon v. Eshhar*, 418 F.3d 1349, 1357 (Fed. Cir. 2005).

18 One shows that one is “in possession” of *the invention* by
19 describing *the invention*, with all its claimed limitations, not
20 that which makes it obvious. [*Vas-Cath Inc. v. Mahurkar*, 935
21 F.2d 1555, 1563-64 (Fed. Cir. 1991)] (“[T]he applicant must
22 also convey to those skilled in the art that, as of the filing date
23 sought, he or she was in possession of *the invention*. The
24 invention is, for purposes of the ‘written description’ inquiry,
25 *whatever is now claimed.*”) (emphasis in original). One does
26 that by such descriptive means as words, structures, figures,
27 diagrams, formulas, etc., that fully set forth the claimed
28 invention. Although the exact terms need not be used *in haec*
29 *verba*, *see Eiselstein v. Frank*, 52 F.3d 1035, 1038 . . .
30 (Fed.Cir.1995) (“[T]he prior application need not describe the
31 claimed subject matter in exactly the same terms as used in the

1 claims”), the specification must contain an equivalent
2 description of the claimed subject matter.

3 *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)

4 It is the disclosures of the applications that count. Entitlement
5 to a filing date does not extend to subject matter which is not
6 disclosed, but would be obvious over what is expressly
7 disclosed. It extends only to that which is disclosed. While the
8 meaning of terms, phrases, or diagrams in a disclosure is to be
9 explained or interpreted from the vantage point of one skilled in
10 the art, all the limitations must appear in the specification. The
11 question is not whether a claimed invention is an obvious
12 variant of that which is disclosed in the specification. Rather,
13 [an] application itself must describe an invention, and do so in
14 sufficient detail that one skilled in the art can clearly conclude
15 that the inventor invented the claimed invention as of the filing
16 date sought.

17 *id* at 1571-72.

18

19 *Enablement*

20 “[T]o be enabling, the specification of a patent must teach those
21 skilled in the art how to make and use the full scope of the claimed invention
22 without ‘undue experimentation.’” *In re Wright*, 999 F.2d 1557, 1561, 27
23 USPQ2d 1510, 1513 (Fed. Cir. 1993). Some experimentation, even a
24 considerable amount, is not “undue” if, *e.g.*, it is merely routine, or if the
25 specification provides a reasonable amount of guidance as to the direction in
26 which the experimentation should proceed. *In re Wands*, 858 F.2d 731, 737
27 (Fed. Cir. 1988). Factors to consider include “(1) the quantity of
28 experimentation necessary, (2) the amount of direction or guidance
29 presented, (3) the presence or absence of working examples, (4) the nature
30 of the invention, (5) the state of the prior art, (6) the relative skill of those in

1 the art, (7) the predictability or unpredictability of the art, and (8) the breadth
2 of the claims.” *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

3
4 *Indefiniteness*

5 The test for definiteness under 35 U.S.C. § 112, second paragraph, is
6 whether “those skilled in the art would understand what is claimed when the
7 claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety*
8 *Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986)(citations omitted).

9
10 *Anticipation*

11 "A claim is anticipated only if each and every element as set forth in the
12 claim is found, either expressly or inherently described, in a single prior art
13 reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628,
14 631 (Fed. Cir. 1987). "When a claim covers several structures or
15 compositions, either generically or as alternatives, the claim is deemed
16 anticipated if any of the structures or compositions within the scope of the
17 claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351 (Fed.
18 Cir. 2001). "The identical invention must be shown in as complete detail as
19 is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d
20 1226, 1236 (Fed. Cir. 1989). The elements must be arranged as required by
21 the claim, but this is not an *ipsissimis verbis* test, *i.e.*, identity of terminology
22 is not required. *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

ANALYSIS

Claims 1-4, 9, 25, 26, and 29 rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement

The Examiner found that claim 1 requires a rule prioritizer be configured to prioritize a plurality of relaxable rules, whereas the specification describes that the user, not the system, decides the priority of the rules (Ans. 3-4). The Appellants contend that the specification and original claims, as filed, clearly described that the Appellants had possession of the invention at the time of filing (App. Br. 9).

We agree with the Appellants. Limitation [2] of claim 1 requires a rule prioritizer that prioritizes relaxable rules by identifying a lower priority rule from the other rules. The scope of this rule prioritizer is not limited by the entity performing the prioritization analysis. The system merely requires that some entity serve as a rule prioritizer. The Examiner's argument that the specification and the original claims do not support a computer deciding the priority of rules (Ans. 11) is irrelevant because the claims do not specifically require the rule prioritization to be performed by a computer. As such, the specification and the originally filed claims are consistent with a showing that the Appellants had possession of the invention at the time of filing since the specification and original claims allowed for a user to specify and determine the priority of rules executed by the system.

The Appellants have sustained their burden of showing that the Examiner erred in rejecting claims 1-4, 9, 25, 26, and 29 under 35 U.S.C.

1 § 112, first paragraph, as failing to comply with the written description
2 requirement.

3
4 *Claims 2 and 15 rejected under 35 U.S.C. § 112, first paragraph, for*
5 *failing to comply with the enablement requirement*

6 The Examiner found that the feature of “wherein the largest impact on
7 the optimization is determined by ranking all products by a marginal
8 contribution to the optimization and selecting the no more than N products
9 by a mixed integer problem” of claim 2 is not described by the specification
10 and a person with ordinary skill in the art would have to undergo undue
11 experimentation to practice the claimed invention (Ans. 4-5). Specifically,
12 the Examiner found that the Specification failed to describe all of the
13 variables used in the described mixed integer problem (Ans. 4-5). The
14 Appellants contend that support for this feature is provided in the
15 Specification such that a person with ordinary skill in the art would not
16 undergo undue experimentation to practice the claimed invention (App. Br.
17 9-11).

18 We agree with the Appellants. Claims 2 and 15 require that N products
19 are selected to form a subset of products for optimization, where the N
20 products have the largest impact on the optimization determined by ranking
21 all products by a marginal contribution to the optimization. The
22 Specification describes that a subset optimization problem can be used to
23 optimize an objective, where a subset of products that have the largest
24 impact on the objective are ranked based on marginal contributions (FF 01).
25 The specification further describes that products are assigned a binary value

1 based on whether they are selected to be included in the subset or products
2 and the binary value is weighted by the maximum marginal value of the
3 product (FF 02). The Specification sets forth algorithms for developing the
4 candidates for subset optimization and further describes solving the
5 algorithm for optimization on pages 29-35 of the specification. The
6 Examiner argues that the specification fails to describe all of the variables
7 used in the mixed integer problem (Ans. 12), however, the limitations
8 required by claims 2 and 15 do not recite nor require these variables. As
9 discussed *supra*, claims 2 and 15 only require optimizing an objective
10 function based on a subset of products that are ranked by their marginal
11 contribution and have the largest impact on the optimization. As such, the
12 Specification describes the claimed invention sufficiently such that a person
13 with ordinary skill in the art would not undergo undue experimentation to
14 practice the claimed invention.

15 The Appellants have sustained their burden of showing that the
16 Examiner erred in rejecting claims 2 and 15 under 35 U.S.C. § 112, first
17 paragraph, for failing to comply with the enablement requirement.

18
19 *Claims 2 and 15 rejected under 35 U.S.C. § 112, second paragraph, as*
20 *being indefinite for failing to particularly point out and distinctly claim the*
21 *subject matter which the Appellants regard as the invention*

22 The Examiner found that the limitations recited in claims 2 and 15 are
23 indefinite because the limitations are unclear as to which products have the
24 largest impact on the price optimization (Ans. 5). The Appellants contend

1 that the specification clearly describes the features of claims 2 and 15 such
2 that the claims are not indefinite (App. Br. 11-12).

3 We agree with the Appellants. Claims 2 and 15 recite language that
4 identifies products having the largest impact on optimization as those that
5 rank by marginal contribution, as discussed *supra*. As such, claims 2 and 15
6 are clear in reciting which products are selected to form a subset of the
7 products. The Examiner argues that the claims are not more specific in
8 reciting which products have the largest impact on optimization; however,
9 this argument only suggests that claims are broad, not indefinite. As such,
10 claims 2 and 15 are not indefinite.

11 The Appellants have sustained their burden of showing that the
12 Examiner erred in rejecting claims 2 and 15 under 35 U.S.C. § 112, second
13 paragraph, as being indefinite for failing to particularly point out and
14 distinctly claim the subject matter which the Appellants regard as the
15 invention.

16
17 *Claims 1-4, 9, 14-19, and 25-30 rejected under 35 U.S.C. § 102(b) as*
18 *being anticipated by Reuhl*

19 The Appellants contend that Reuhl fails to describe limitation [1] of
20 claims 1 and 14 and these limitations are no inherent to software
21 programming (App. Br. 15). The Examiner responds that when a software
22 program is developed, rules are set by a programmer and the ability to
23 change the rules is inherent to all programming (Ans. 16-17). We agree with
24 the Appellants. Limitation [1] of claims 1 and 14 require a rule editor that is
25 configured to set relaxable rules using parameters. Reuhl describes the use

1 of rules to determine item prices (FF 04), but fails to specifically describe an
2 editor that can set a rule.

3 The Examiner concedes that Reuhl does not describe this limitation
4 (Ans. 8 and 16-17). The Examiner argues that in Reuhl rules are set by a
5 programmer and the ability to change the rules is inherent to all
6 programming (Ans. 17). However, limitation [1] requires a rule editor, as a
7 component of a price optimization system, to configure the rule parameters.
8 That is, limitation [1] requires more than just a programmer's ability to
9 implement rules on a system using programming; it requires that a
10 component of the system itself be used to configure and set rules. Although
11 the ability to program rules into a software application may be known, the
12 claimed invention requires that a component of the system itself be used to
13 configure and set the rules. This functionality is not inherent to programs.
14 The use of a rule editor to configure rules is no inherent to programming.
15 Since Ruehl also fails to describe this limitation (discussed *supra*), Reuhl
16 fails to anticipate independent claims 1 and 14. Dependant claims 2-4, 9,
17 15-19, and 25-30 incorporate this same limitation and therefore Reuhl fails
18 to anticipate these claims as well.

19 Since we find this argument determinative, we need not reach the
20 remaining arguments raised by the Appellants.

21 The Appellants have sustained their burden of showing that the
22 Examiner erred in rejecting claims 1-4, 9, 14-19, and 25-30 under 35 U.S.C.
23 § 102(b) as being anticipated by Reuhl.

24

CONCLUSIONS OF LAW

The Appellants have sustained their burden of showing that the Examiner erred in rejecting claims 1-4, 9, 25, 26, and 29 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

The Appellants have sustained their burden of showing that the Examiner erred in rejecting claims 2 and 15 under 35 U.S.C. § 112, first paragraph, for failing to comply with the enablement requirement.

The Appellants have sustained their burden of showing that the Examiner erred in rejecting claims 2 and 15 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Appellants regard as the invention.

The Appellants have sustained their burden of showing that the Examiner erred in rejecting claims 1-4, 9, 14-19, and 25-30 under 35 U.S.C. § 102(b) as being anticipated by Reuhl.

DECISION

To summarize, our decision is as follows.

- The rejection of claims 1-4, 9, 25, 26, and 29 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement is not sustained.
- The rejection of claims 2 and 15 under 35 U.S.C. § 112, first paragraph, for failing to comply with the enablement requirement is not sustained.

- The rejection of claims 2 and 15 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Appellants regard as the invention is not sustained.
- The rejection of claims 1-4, 9, 14-19, and 25-30 under 35 U.S.C. § 102(b) as being anticipated by Reuhl is not sustained.

REVERSED

mev

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